ASTM-6 Virtual

<u>Leadership Group</u>
Goetz, Miller, Griffith, Hoy, Larson, Hodkinson, Margolis, Falkowski

Special thanks to
++ Org Cmte ++
++ WG Leads ++

++ All who contributed data, results, outreach & interpretation ABoVE & Beyond the call..

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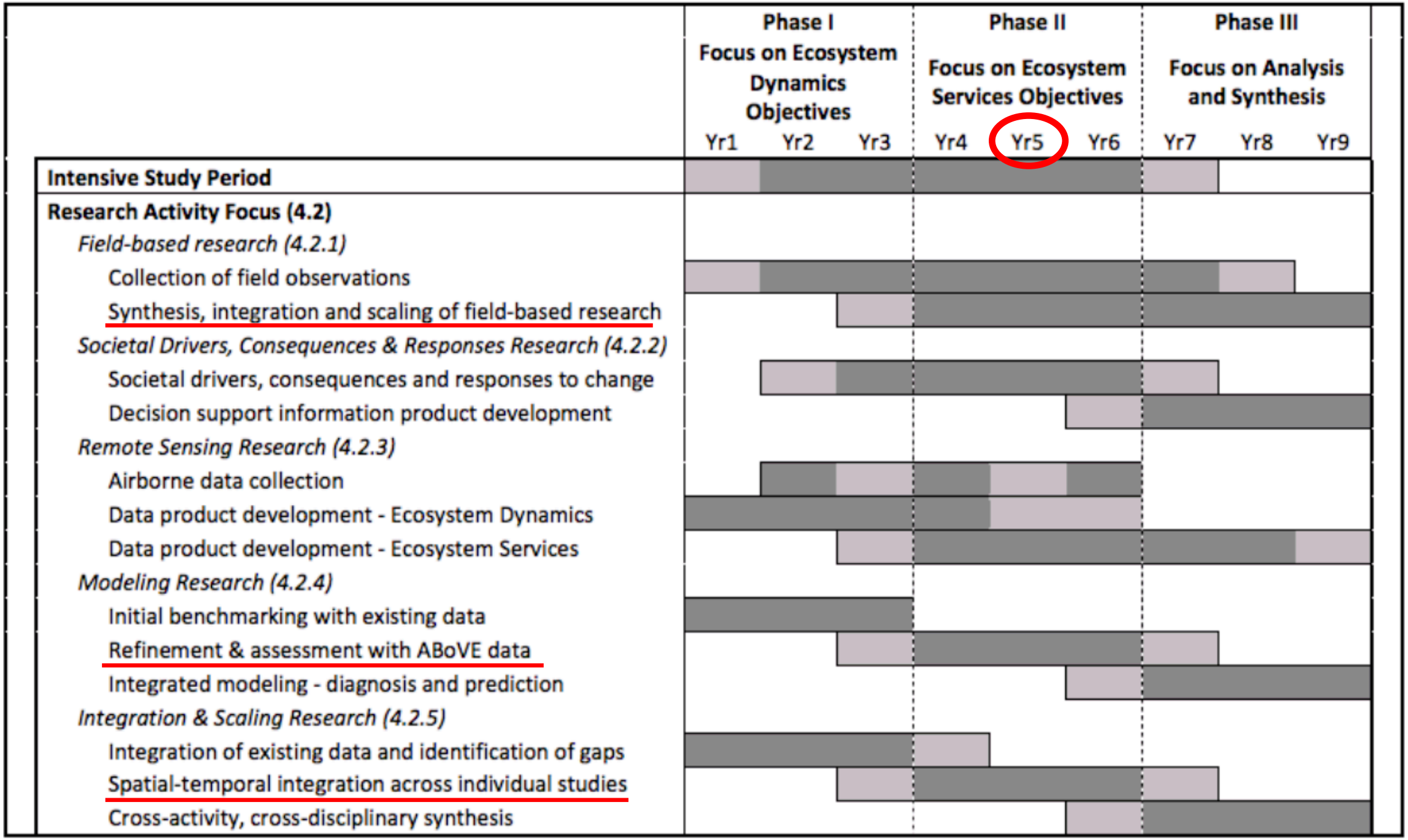
ASTM6 Organizing Committee

Thank you!


Phase I
Focus on Ecosystem Dynamics Objectives
Phase II
Focus on Ecosystem Services Objectives
Phase III
Focus on Analysis and Synthesis
Yr1
Yr2
Yr3
Yr4
Yr5
Yr6
Yr7
Yr8
Yr9
Intensive Study Period
Research Activity Focus (4.2)
Field-based research (4.2.1)
Collection of field observations
Synthesis, integration and scaling of field-based research
Societal Drivers, Consequences & Responses Research (4.2.2)
Societal drivers, consequences and responses to change
Decision support information product development
Remote Sensing Research (4.2.3)
Airborne data collection
Data product development - Ecosystem Dynamics
Data product development - Ecosystem Services
Modeling Research (4.2.4)
Initial benchmarking with existing data
Refinement & assessment with ABoVE data
Integrated modeling - diagnosis and prediction
Integration & Scaling Research (4.2.5)
Integration of existing data and identification of gaps
Spatial-temporal integration across individual studies
Cross-activity, cross-disciplinary synthesis

ASTM-6 Objectives

- Wrapup of Phase 1 & continued transition to Phase 2 projects
- Reports on Phase 2 and Airborne projects
- Review, discuss, refine & advance:
  - 2021 field / airborne campaign plans
  - Overall research progress
  - Integration of projects (synthesis activities)
  - Modeling (of all types)
- Identify any issues & opportunities to maximize impact

ABoVE Progress *thus far*..

254 publications reported by 111 projects*

233 publications by **88** NASA funded projects

(68 ABoVE + 20 other NASA projects)

+21 pubs by **23** affiliated projects*

*Not including ABoVE Partners (NGEE-Arctic, POLAR, CFS, NEON)

Reminder to upload your publications to the ABoVE web site
& keep Leadership group / NASA HQ appraised.

ABoVE ST currently has 770 members,
incl. 125 graduate students.
Currently 1465 participants
(science team, resource managers, others following)

Environmental Research Letters

Resiliency and Vulnerability of Arctic and Boreal Ecosystems to Environmental Change: Advances and Outcomes of ABoVE (the Arctic Boreal Vulnerability Experiment)

http://iopscience.iop.org/journal/1748-9326/page/ABoVE

30 papers published thus far
15+ in press / in review
~60% acceptance rate

Guest Editors

Scott Goetz, Northern Arizona University
Natalie Boelman, Colombia University
Abhishek Chatterjee, NASA Goddard Space Flight Center
Roisin Commane, Harvard University
Joshua Fisher, NASA / Caltech Jet Propulsion Laboratory
Peter Griffith, NASA Goddard Space Flight Center
Mike Goulden, University of California at Irvine
John Kimball, University of Montana
Tatiana Loboda, University of Maryland
Michelle Mack, Northern Arizona University
Charles Miller, NASA / Caltech Jet Propulsion Laboratory
Sue Natali, Woods Hole Research Center
Christopher Neigh, NASA Goddard Space Flight Center
Brendan Rogers, Woods Hole Research Center
Merrit Turetsky, University of Guelph
Jennifer Watts, University of Montana

Phase 2 Thematic / Disciplinary Science Working Groups

Carbon Dynamics (Chatterjee, Sweeney)
Ecosystem Services & Co-production (Lutz & Brinkman)
Fire and Insect Disturbance (Bourgeau-Chavez, Loboda)
Hydrology & Permafrost (Butman, Kimball)
Modeling Framework & Comparisons (Fisher)
Snowscapes (Boelman & Prugh)
Vegetation Dynamics & Distribution (Epstein, Rogers)
Vegetation Structure & Function (Montesano)

Note we will not be able to accommodate WG reports this year..
but we will hear synthesis activity overviews.

Airborne WGs

Group Name	Email List	Members	Join	Measurements of WG Projects
Airborne Daily	above_airborne_daily@cce.nasa.gov	Members >>	join	N/A
GMAO Weather	gmao_wx@cce.nasa.gov	Members >>	join	N/A
Airborne Data	above_wg_airborne_data@cce.nasa.gov	Members >>	join	N/A
Airborne Science>>	above_wg_airborne@cce.nasa.gov	Members >>	join	excel

Programmatic WGs

Group Name	Email List	Members	Join
Collaborations and Engagement>>	above_wg_stakeholder@cce.nasa.gov	Members >>	join
Community Science>>	above_wg_community@cce.nasa.gov	Members >>	join

Data Products WGs

Group Name	Email List	Members	Join
Planet Imagery Evaluation	above_planet_eval@cce.nasa.gov	Members >>	join
Core Variables & Standards>>	above_wg_corevar@cce.nasa.gov	Members >>	join
Digital Elevation Models	above_wg_dem@cce.nasa.gov	Members >>	join
Geospatial Products & Standards>>	above_wg_geospatial@cce.nasa.gov	Members >>	join
Radar Aboveground Woody Biomass	above_wg_radar_biomass@cce.nasa.gov	Members >>	join
Radar Active Layer-Deep Soil Moisture	above_wg_radar_alt@cce.nasa.gov	Members >>	join
Radar Wetlands and Surface Soil Moisture	above_wg_radar_wetlands@cce.nasa.gov	Members >>	join
The Radar Wetlands and Surface Soil Moisture Working Group's purpose is to coordinate field collection of soil moisture and wetland extent and inundation information coincident to Radar airborne and satellite image collections. This includes development of field collection protocols, gathering information on what field data were collected at what locations and when, as well as synthesizing field data.			
Radarsat	above_wg_radarsat@cce.nasa.gov	Members >>	join
SAR Cal/Val Data Synthesis	above_wg_calval@cce.nasa.gov	Members >>	join
The goal of this working group is to create a digital compilation of field measurements across the ABoVE domain for support of airborne radar data analyses. The membership of this working group is comprised of ABoVE WG leads and researchers interested in contributing to the effort.			
Spectral Imaging	above_wg_spectral@cce.nasa.gov	Members >>	join

Current (June 2020) WG Synthesis Activities

Fire & Insect Disturbance:
Arctic-boreal wildfire combustion synthesis
Boreal post-fire regeneration synthesis (***with Veg Dynamics WG***)
Arctic linked combustion – regrowth synthesis

Vegetation Dynamics & Distribution:
Arctic productivity trends & drivers ("greening / browning")
Boreal productivity trends & drivers

Vegetation Structure & Function
LVIS L2 vegetation structure estimates for ABoVE analyses

Cross WG
- Multi-disturbance synthesis
- Survey of permafrost degradation types & impacts

Current (June 2020) WG Synthesis Activities (2)

Snowscapes:
How snow properties are influenced by wildfire & how they in turn influence ecosystem recovery and vulnerability to fire

SAR Derived Soil Moisture & Active Layer Thickness:
Calibration & Validation Synthesis (multiple activities)

Hydrology / Permafrost:
- Temporal and spatial variations of active layer properties over foundational flight lines and upscaling to the ABoVE domain
- Clarifying patterns, trends, and drivers in thermokarst activity in relation to permafrost conditions
- Evidence and impacts of water cycle trends in the boreal-Arctic from multisensor and multiscale observations

Current (June 2020) WG Synthesis Activities (3)

Carbon Dynamics:

- Carbon budget of the ABoVE domain
- Methane data, models and knowledge gaps
- Projecting carbon – climate feedbacks

Modeling:

- A menu of options will be provided..